

Atoms



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THE CHANGING WORLD OF IMMUNISATIONS

Immunisations have changed dramatically over the past decade. Virtually every year new vaccinations are introduced, old ones modified and new combinations created. This past year has seen the worldwide introduction of vaccines for human papillomavirus and rotavirus. New delivery systems are being developed, including additional intranasal and oral preparations, immunisations that need no cold storage, and systems so radically different, such as incorporating immunisations into common foods or on plants, that virtually entire populations could be vaccinated quickly and cheaply. Finally, neonatal immunisation that could trigger life long memory is under investigation. Numerous issues continue to be debated. How safe are vaccines? In this issue, Elliman and Bedford review the measles, mumps and rubella (MMR) controversy. No data have emerged during the past decade that suggests any link between MMR and neurodevelopmental delays, specifically autism. A recent report in *N Engl J Med*, that examined the relationship between mercury burden in immunisations given during the first 7 months of life and neurodevelopmental outcome, found no consistent relationship between mercury levels and the results of 42 neurocognitive measures in 1047 children 7–10 years of age.¹ Should the UK introduce new vaccines? Roderick and colleagues discuss the report from the British Paediatric Surveillance Unit regarding severe varicella infection in children and whether varicella vaccine should be added to the UK immunisation schedule. I suspect that once again cost will be a major consideration in this decision. In comparison to other countries, the UK was slow to introduce conjugate pneumococcal vaccine. Another important question is the balance between individual risk and population health. For example, the varicella vaccine is effective and likely reduces the small risk of very serious outcomes, yet the cost associated with universal vaccination is substantial.

From a different perspective, as individuals in society become more risk adverse, we are far less tolerant of drug (or vaccine) side effects. In the US we switched from inactivated polio vaccine to oral polio vaccine because of approximately 6–8 cases of vaccine-associated polio each year. The cost to the US healthcare system was substantial. I am well aware of the concerns about the pharmaceutical industry, yet I believe as societies become more risk adverse, developing new therapies becomes more difficult—very few are 100% safe.

See pages 1055, 1051 and 1062

CONTINUOUS VERSUS CATEGORICAL DATA: NORMALCY VERSUS DISEASE

The debate is an old one—are data best analysed by category, reflecting how most physicians think and talk, or continually, which usually more accurately reflects the data. This conundrum is played out in the paper by Reinehr and colleagues from Germany, and the perspective by Peter Gluckman. Reinehr describes wide variability—6% to 39%, depending upon the definition, in the prevalence of metabolic syndrome in 1205 overweight children and adolescents. Professor Gluckman is less certain that we should use categories at all, but rather that there is individual variation in metabolic adaptive capacity. Physicians like categories—severity of asthma, prematurity, low birth weight, overweight, underweight—but before we become very fond of a particular label we should be certain it has clinical utility.

See pages 1053 and 1067

EPIDEMIOLOGY 101

The hormone replacement debacle—20 years of observational data leading to hormone replacement therapy being recommended in older women to prevent heart disease and osteoporosis, reversed by a single well done randomised clinical trial²—has sparked renewed interest in what we learn from observational data. Gary Taubes, in a clear and succinct article in the *New York Times* entitled “Do we really know what makes us healthy?” questions conclusions from epidemiological research and reviews numerous issues, including residual confounding and the importance of different type of biases.³ From my standpoint, as we try to quantify smaller and smaller risk, the likelihood that we can be certain about our findings is more uncertain. The article is a wonderful read—a primer about epidemiology.

THIS MONTH IN EDUCATION & PRACTICE EDITION

- Harry Baumer details the new NICE UTI guidelines. See page ep189
- Osteoporosis is a growing concern in children and adolescents—Dr NJ Shaw from Birmingham presents a review. See page ep169
- There is a best practice piece on Guillain–Barre Syndrome—a disease I always find fascinating. See page ep161
- A problem solving case—a child with chronic diarrhoea with weight loss, dermatophile on alopecia, and new antiepileptic drugs in pharmacy update are also included. See pages ep176, ep193 and ep182

SEASON'S GREETINGS

As always I wish you, your family, and friends season's greetings, health and well being.

References

- 1 Thompson WW, Price C, Goodson B, et al. Early thimerosal exposure and neuropsychological outcomes at 7 to 10 years. *N Engl J Med* 2007;**357**:1281–92.
- 2 Writing group for the Women's Health Initiative Investigators. Risks and benefits of estrogen plus progestin in healthy postmenopausal women. *JAMA* 2002;**288**:321–33.
- 3 http://www.nytimes.com/2007/09/16/magazine/16epidemiology-t.html?_r=1&oref=slogin (accessed 25 September 2007).